

SYZGANOV, A.N.; TKACHENKO, G.K.

~~SECRET~~
Surgery in bronchiectasia. Trudy Inst. klin. i eksp. khir. AN Kazakh.
SSR 4:72-77 '58. (MIRA 12:4)

1. Institut klinicheskoy i eksperimental'noy khirurgii AN Kazakhskoy
SSR.

(BRONCHI--SURGERY)

MOROZOV, M.Ye. ; TKACHENKO, G.K.

Indications for surgery in pulmonary tuberculosis. Trudy Inst. klin.
i eksp. khir. AN Kazakh. SSR 4:84-86 '58. (MIRA 12:4)
(TUBERCULOSIS) (LUNGS--SURGERY)

TKACHENKO, G.K.

Treatment of thromboembolic diseases of the veins in the lower
extremities. Trudy Inst. klin. i okup. khir. AN Kazakh. SSR.
9:175-178 '63. (MIRA 17:12)

TKACHENKO, G.K., dotsent

Seventh plenum of the Board of the Society of Kazakhstan Surgeons.
Zdrav.Kazakh.: 22 no.11:72-75 '62. (MIRA 16:2)

1. Sekretar' pravleniya Obshchestva khirurgov Kazakhstana.
(KAZAKHSTAN—SURGICAL SOCIETIES)

TKACHENKO, G.K.

Sixth Plenum of the governing board of the Kazakhstan Surgical Society. Zdrav. Kazakh. 21 no.11:77-80 '61.

(MIRA 15:7)

1. Sekretar' Pravleniye obshchestva khirurgov Kazakhstana.
(KAZAKHSTAN--SURGICAL SOCIETIES)

TKACHENKO, G.K.

Activity of the Surgical Society of Kazakhstan in 1961. Zdrav.
Kazakh. 22 no.6:75-76 '62. (MIRA 15:11)

1. Sekretar' pravleniya Obshchestva khirurgov Kazakhstana.
(KAZAKHSTAN--SURGICAL SOCIETY: ~~ES~~)

TKACHENKO, G.K.

Work of Kazakh Surgical Society in 1960. *Zdrav. Kazakh.* 21 no.5:
78-79 '61. (MIRA 15:2)

1. Sekretar' pravleniya Obshchestva khirurgov Kazakhstana.
(KAZAKHSTAN SURGICAL SOCIETIES)

TKACHENKO, G.K., dotsent

Prevention of traumatism among miners. Zdrav. Kazakh. 18 no.1:
75-77 '58. (MIRA 13:7)
(KAZAKHSTAN—MINE ACCIDENTS)

TKACHENKO, G.K.

Surgery in pulmonary tuberculosis. Trudy Inst.klin.i eksp.khir.
AN Kazakh.SSR 5:57-62 '59. (MIRA 13:5)
(LUNGS--SURGERY) (TUBERCULOSIS)

TKACHENKO, Georgiy Musiyevich; DOMASHNEVICH, O., red.; KALECHITS, G.,
tekhn.red.

[Sharkovshchina Artificial Insemination Station serving several
collective farms] Sharkovshchinskaya mezhkolkhozная stantsiya
iskusstvennogo osemeneniya zhivotnykh. Minsk, Gos.izd-vo BSSR.
Red.sel'khoz.lit-ry, 1960. 29 p. (MIRA 14:3)

1. Glavnyy veterinarnyy vrach Sharkovshchinskogo rayona (for
Tkachenko).
(Sharkovshchina District--Artificial insemination)

Tkachenko, G.M.

USSR / Zooparasitology - General problems

G-1

Abs Jour: Referat. Zh. Biol. No. 1, 1958, 792

Author : Tkachenko, G.M.

Title : Breeding of White Mice Free From Intestinal
Protozoa and Helminths

Orig Pub: Sb. tr. Kurskiy med. in-ta, 1956, No. 11, 369-
370

Abstract: The isolation of young mice from the age of 17
days in sterile cages guarantees freedom from
contamination by protozoa and helminths.

Card 1/1

TKACHENKO, G.M.

Work practices at an intercollective farm station for artificial
insemination of animals. Veterinariia 37 no.7:29-30 JI '60.
(MIRA 16:2)

1. Glavnyy veterinarnyy vrach Sharkovshchinskogo rayona Molo-
dechnenskoj oblasti Belorusskoy SSR.

(Sharkovshchina District--Artificial insemination)

TKACHENKO, G.M., dotsent

Stable forms of Trichomonas. Sbor. trud, Kursk. gos. med. inst.
no.13:158-162 '58. (MIRA 14:3)

1. Iz kafedry obshchey biologii i parazitologii (zav. - dotsent
G.M.Tkachenko) Kurskogo gosudarstvennogo meditsinskogo instituta.
(TRICHOMONAS)

TKACHENKO, G.M., dotsent

Survival of cystoid forms of *Trichomonas muris* in the external environment. Sbor. trud. Kursk. gos. med. inst. no.13:163-166 '58. (MIRA 14:3)

1. Iz kafedry obshchey biologii i parazitologii (sav.- dotsent G.M.Tkachenko) Kurskogo gosudarstvennogo meditsinskogo instituta. (TRICHOMONAS)

ИВАНОВ, С. М.

"The work of the interkolkhoz station of animal artificial insemination."

Veterinariya, Vol. 37, No. 7, 1960, p. 29

Chiz Vet. Dr. - Sharikovskinskiy Rayon, Molozhino Oblast, BSSR

L 32674-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/GD

ACC NR: AT6013569

(N)

SOURCE CODE: UR/0000/65/000/000/0322/0330

AUTHOR: Altayskiy, Yu. M.; Tkachenko, G. M.

75
Bx1

ORG: Kiev Order of Lenin Polytechnic Institute (Kiyevskiy ordena Lenina politekhni-cheskiy institut)

TITLE: Some electroluminescent properties of SiC crystals

*7-27

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 322-330

TOPIC TAGS: silicon carbide, recombination luminescence, luminescence spectrum, luminescent crystal, ~~silicon carbide~~, ELECTROLUMINESCENCE, CURRENT DENSITY, CRYSTAL SURFACE, PN TRANSITION

ABSTRACT: The effect of current density ($1-10 \cdot 10^3$ A/cm²) and temperature (100-700°K) on electroluminescent properties of α -SiC and β -SiC crystals was investigated. The luminescence spectra corresponding to various types of p-n transitions were analyzed using an ISP-51 spectrograph. It was found that the degree of impurity and structural inhomogeneity in SiC crystals as well as the pattern of the p-n transitions is reflected in the crystal surface luminescence characteristics. It was found that direct current passing through either β -SiC or α -SiC results in an identical luminescence characteristic. For both, the linear dependence of the recombination luminescence upon the

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L 32674-66

0

ACC NR: AT6013569

degree of electronic excitation is lost when current density exceeds a critical level. The die-away time of recombination luminescence of SiC is less than 10^{-8} sec. The recombination luminescence spectra corresponding to various p-n transitions are similar and represent a wide band with a maximum at 2-2.3 ev. Orig. art. has: 10 figures.

SUB CODE: 07,11/

SUBM DATE: 03Jul65/

ORIG REF: 003/

OTH REF: 008

Card 2/2

BLG

TKACHENKO, G.M., dotsent

2

Distribution of giardia cysts in the large intestine of the host. Sbor. trud. Kursk. gos. med. inst. no.16:290-293 '62.

(MIRA 17:9)

Quantity and correlation of the vegetative forms and cysts of Lamblia in mice. Ibid.:294-297

Periodicity of the discharge of Lamblia cysts from the host's organism. Ibid.:298-301

Lamblia cyst formation. Ibid.:302-305

(MIRA 17:9)

1. Iz kafedry obshchey biologii i parazitologii (zav. - dotsent G.M. Tkachenko) Kurskogo meditsinskogo instituta.

TKACHENKO, G.P., inzh.

Flanging of parts made from thin metal sheets. Khim.mashinostr.
no.1:35 Ja-F '64. (MIRA 17:4)

BALUYEV, M.P.; TKACHENKO, G.P.

Equipment for the mechanized assembly of girth butt joints
in cylindrical apparatuses. Avtom. svar. 16 no.8:76-78 Ag '63.
(MIRA 16:8)

1. Volgogradskiy zavod imeni Petrova.
(Electric welding--Equipment and supplies)
(Cylinders--Welding)

TKACHENKO, G.P., inzh.; NOVICHENKO, V.Ye.

Rolling of cones with periodical turns of billets. Khim.mashinostr.
no.5:37 S-O '63. (MIRA 16:10)

TRACHENKO, G.P., Inzh.

Mechanizing the flanging of the housing of vessels. Krim. i neft.
mashinostr. no.4:42 O 164. (MIRA 17:12)

TKACHENKO, G.F., Inzh.

Certain features of the hot roll forming of shells. Khim. i
neft. mashinostr. no.2343-44 Ag '64

(MIRA 18:1)

L 36146-66

ACC NR: AP6016316

SOURCE CODE: UR/0182/66/000/001/0038/0040

AUTHOR: Tkachenko, G. P., Novichenko, V. Ye.

ORG: none

TITLE: Mechanization of the loading and unloading of container-bottom shapes from furnace

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no.1, 1966, 38-40

TOPIC TAGS: conveying equipment, heat treat furnace, metal forming machine tool, metallurgic research

ABSTRACT: In recent years there has occurred a rise in the demand for convex (spherical, flanged and elliptical), relatively thick large-diameter container bottoms used in the production of chemical and petroleum apparatus, bottom-pour teeming ladles, bessemer converters, etc. These bottoms are finished in hot state in special forming machines, but prior to that they must be reheated in a furnace. The high temperature of the billet (~1100°C), as well as its intense heat radiation and distinctive shape complicate the mechanization of its conveyance to the heating furnace and thence to the forming machine. This problem was resolved to some extent by

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UDC: 621.783

L 36146-66

ACC NR: AP6016316

the development of a trolley-type feeder (Baluyev, M. P., Tkachenko, G. P., Kuznechno-shtampovochnoye proizvodstvo, 1964, no 2) for a single furnace but subsequently there arose the need for a feeder that could tend at least four posts -- two heating furnaces, the forming machine and the storage area. Accordingly the authors describe a special conveying system developed for this purpose (Fig. 1) and

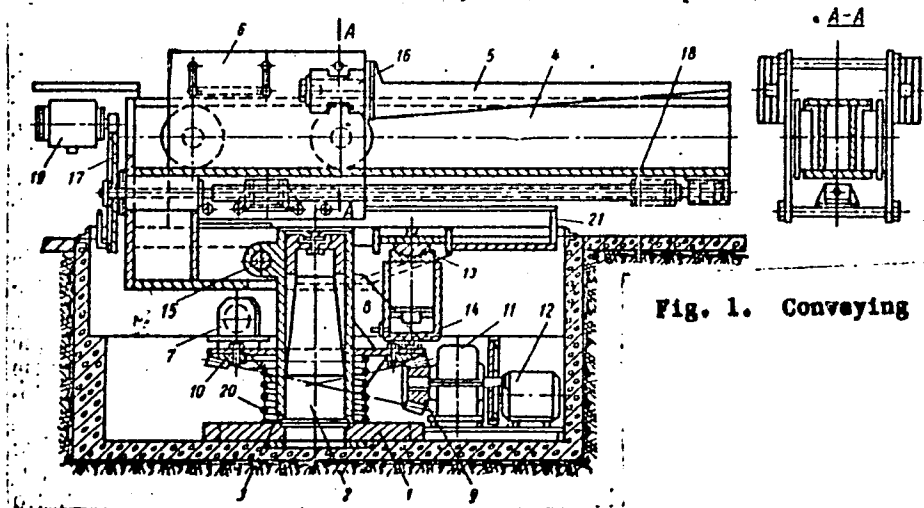


Fig. 1. Conveying system

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ACC NR: AP6016316

experimentally operated at the Volgograd Petroleum Machine Building Plant imeni Petrov. Mounted on frame 1 and vertical axle 2 is horizontal axle 15 which enables rail track 4 to turn not only in the horizontal but also in the vertical plane. Carriage-trolley 6, traveling on rail track 4, is equipped with grabs 5 for clamping the load. The operation of the machine is illustrated in Fig. 2: an overhead crane

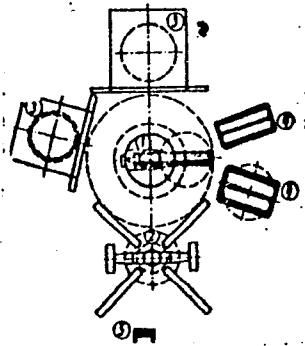


Fig. 2. Placement of conveying system in container-bottom-forming department

deposits the bottom in storage area 4. Conveying system 1 revolves in the horizontal plane and descends in the vertical plane until it occupies a position where its grabs can clamp the bottom. After the bottom is clamped, the carriage rises together with

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ACC NR: AP6016316

the bottom and rolls back toward the center, whereupon the entire system rotates like a turntable in the horizontal plane about the vertical axle until the bottom faces furnace 3 and can be deposited in it. After heating, the bottom is in the same manner withdrawn from the furnace and conveyed to forming machine 2. The entire system is operated from a control panel. It can lift hot bottoms weighing up to 10 tons and measuring up to 20 m² in area, 1.6-5.2 m in diameter and up to 80 mm in thickness, and it can convey them at the necessary speed (20 m/min) over a distance of up to 25 m between the furnace and the forming machine. The system can be adapted to the conveyance of other shapes and sizes of products. Orig. art. has: 5 figures.

SUB CODE: 11, 13/ SUBM DATE: none/

Cord 4/4 *llh*

TKACHENKO, G.S.

In the Mari Economic Council. Biul.tekh.-ekon.inform. no.8:83-84
'61. (MIRA 14:8)

(Mari A.S.S.R.—Economic councils)

TKACHENKO, G.S., inzh.

Freight cars for loose and bulky loads. Mekh.trud.rab. 11
no.8:45-47 Ag '57. (WIRA 10:11)
(Railroads--Freight cars)

YEREMEYEVA, Galina Fedorovna; ILINICH, Anna Yakovlevna; TKACHENKO,
Georgiy Stepanovich; ZVEREV, A.G., prof., red.; KHELININA, Ye.,
red.

[Principles of savings management] Osnovy sberegatel'nogo
dela. Moskva, Finansy, 1965. 107 p. (MIRA 18:5)

TKACHENKO, G.V.

USSR/Cultivated Plants.

Fruits. Berries.

M

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34827

Author : Tkachenko G.V.

Inst : -

Title : Best Pollinators for the Grape Variety Chaush

Orig Pub : Sad i ogorod, 1957, No 6, 67-68

Abstract : No abstract

Card : 1/1

126

TKACHENKO, G.V.

Effect of gibberellin on fruiting in the Chaush grapevine.
Fiziol.rast. 7 no.3:348-350 '60. (MIRA 13:6)

1. Department of Plant Physiology and Darwinist of Uzhgorod
University, Ukrainian S.S.R.
(Gibberellins) (Grapes)

TKACHENKO, G.V.; KORNEYEV, N.T.

Effect of lignite waste products on grape yields [with summary in English]. Ukr.bot.zhur. 14 no.4:47-51 '57. (MIRA 11:1)

Uzhgorods'kiy derzhavniy universitet, Kafedra fiziologii roslin.
(Transcarpathia--Lignite) (Fertilizers and manures)
(Viticulture)

1. AUTHOR : G.M.
2. TITLE : Cultivated Plants. Fruits. Berries. Vitis. Vitis.

3. JOURNAL : Vestnik Biologii, No. 1, 1957, No. 1, 1957

4. AUTHOR : Tkachenko, G.V.

5. JOURNAL : Vestnik Biologii, No. 1, 1957, No. 1, 1957

6. TITLE : Fruit-Bearing Capacity of Grape Bunches in the Tiansh-Caspian.

7. JOURNAL : Vestnik Biologii, No. 1, 1957, No. 1, 1957

8. ABSTRACT : Microscopic analysis of wintering grape bunches shows an absence of substantial difference in the degree of development of the inflorescence embryos in varieties having different flowering times. Some varieties (Liska, Gruz-Lovelya, Riesling and others) have the main fruiting bud most developed in the side eye on the shoot, at the 3rd and 12th eyes their development was equal. The possibility of the inflorescences reforming in the spring was

9. CAPD : 1/5

Country : USSR
 CATEGORY : CULTIVATED PLANTS. Fruits. Berries. Nut. Tea.
 RES. JOUR. : REBOL., No. 2, 1959, No. 1243
 AUTHOR : Tkachenko, G.V.
 INST. : Ukrainian Univ.
 TITLE : The Flowering of Grape Vines in the Carpathians
 ORIS. REP. : Nauk. zap. Uzhgorodsk. univ., 1957, 10, 37-63
 ABSTRACT : Phenological data from the Trans-Carpathian Auxiliary Station of the Institute of Beresov gotten from 1947 to 1956 and from 1952 on additional observations which were made in Vinogradov and Lzhigolov were used for this study. The beginning of blossoming in the vineyards began earlier than in a number of other grape-raising districts of the European part of the USSR and on the average took place on 2 June. The sum of active

CARD: 1/1

COUNTRY :
CATEGORY : CULTIVATED PLANTS.

SPS. JOUR. : RASCOL., No. 1, 1959, No. 1043

AUTHOR :
ORIP. :
TITLE :

ORIG. PUB. :

ABSTRACT : temperature required for all varieties to pass into the flowering state is 280°. This figure is nearly 300° less than in other districts. On a six year average the average daily temperature of the first day of flowering was 18.4°. Flowering begins at Vinogradovskiy Rayon, Bel. tovar. Rayon comes next and finally Makhovskiy and Ushgorodskiy Rayons follow. On the average the divergence between the commencement

CARD: 2/4

1/1

COUNTRY :
 CATEGORY : CULTIVATED PLANTS.
 ABST. JOUR. : RZBiol., No. 1, 1950, No. 1843

AUTHOR :
 INET. :
 TITLE :

ORIG. PUB. :

ABSTRACT : of flowering in Vinogradovskiy and Vzhgorod-
 skiy Rayons ranges between 1-5 days. Inde-
 pendently of the time when flowering begins
 and the periods when individual inflores-
 cences come into blossom, the days with
 maximum flowering of the inflorescences in
 different varieties do to a considerable
 extent coincide, thus permitting cross pol-
 lination. The rhythmical nature of flow-
 ering is shown by the phenomenon when

CARD.

3/4

COUNTRY : USSR
 CATEGORY : Cultivated Plants. Fruits. Berries. Kuzn. 23.
 REF. JOUR : Ref Zhur-Biologiya, No. 1, 1959, No. 177
 AUTHOR : Tkachenko, G.V.
 INSC. : Uzhgorod Univ.
 TITLE : Carination Studies of Fruit-tree Pollen Under
 Conditions of Trans-Carpathian Regions.
 ORIG. PUB. : Nauch. zap. Uzhgorodsk. univ., 1977, 23.
 65-68

ABSTRACT : Observations made at the botanical garden of the
 Uzhgorod Univ. In the years 1954 - 1955 have
 shown that the blooming period fluctuates from 3 days
 (for plum and cherry) to 6 days (for apricot). Maximum
 blooming for pear and cherry occurs on the second day
 of the blooming period, but for apple, plum, and apricot,
 maximum blooming occurs on the last or last but one
 of the blooming period. Pollen from apple flowers, which
 opened during the first day of blooming, did not germi-
 nate fully, but in flowers which opened on subsequent

CARD:

1/2

224

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CA

Polymerization of 1,1-dichloroethylene in solutions of emulsifiers under the action of water-soluble peroxide. G. V. Tkachenko and P. M. Khomikovskii. *Doklady Akad. Nauk S.S.S.R.* 72, 543-5 (1950).—The kinetics of the polymerization were detd. with 1,1-C₂H₂Cl₂ chosen as representative of monomers practically insol. in H₂O; also, the polymer swells only to a limited extent in its monomer. The distribution coeff. of the monomer between H₂O and micelles of the emulsifier, Na salts of C₁₂-C₁₈ alkylsulfonic acids and K palmitate, was detd. to ~500 at 40°. In runs with the soln. constantly kept satd. with the monomer through feeding from the vapor phase, the rate of polymerization, r , at 40° without emulsifier is exceedingly slow. With a concn. of emulsifier $c = 0.1$ – 0.5% , r is slow in the initial period, then changes to a faster stationary rate. With 3–10% an initially very fast r is followed, at the time τ_1 , by a level branch of very slow polymerization, going over, at τ_2 , into a linear branch of const. r . At this stationary stage, r increases with c between 0.1 and 5%, and remains unchanged between $c = 5$ and 10%. The activation energy of the over-all reaction between 40 and 60° is 14 kcal./mole. In contrast to water-sol. monomers (methacrylates, C₂H₅CN, etc.), polymerization in this system, if one active particle (involving one or a few mols. of the monomer) is to be available per

micelle of the soap of 25-A. radius, requires a soap concn. of the order of 1–10%. The initial sharp rise of the polymerization curves is detd. by soln. of the monomer in the emulsifier; the inflection at τ_1 corresponds to satn. of the soln. and of the micelles with monomer. The range of const. r , from τ_1 on, corresponds to a reaction taking place in the polymer particles or, predominantly, at their surface, after the monomer dissolved in the soap micelles has been consumed. The dependence of the stationary r on c is evidently linked with a decrease of the size of the polymer particles with increasing c . The main role of the emulsifier thus consists in a stabilization of the polymer particles. The bulk of the polymer is formed at the initiation particles, irrespective of the location of the initiation.

N. Thon

TKACHENKO, G. V.

"Investigation of the Kinetics of Vinyl Chloride Polymerization."
Sub 19 Nov 51, Moscow Inst of Fine Chemical Technology imeni M. V.
Lomonosov.

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SO: Sum. No. 480, 9 May 55

183T22

USSR/Chemistry - Plastics and Elastomers May/Jun 51

"Mechanism of Emulsion Polymerization. Polymerization of 1,1-Dichloroethylene in Solutions of Emulsifiers," G. V. Tkachenko, P. M. Khomikovskiy, Moscow

"Kolloid Zhur" Vol XIII, No 3, pp 217-225

Detd colloidal soly of 1,1-dichloroethylene in emulsifier sols of different concns. Shown for 0.1-10% concns, the concn of dichloroethylene in emulsifier micelles is approx const (34-38%). Studied effect of concn of emulsifier on rate of

ID 183T22

USSR/Chemistry - Plastics and Elastomers (Contd) May/Jun 51

polymerization of 1,1-dichloroethylene under influence of $K_2S_2O_8$. Examd possible locations of elementary reactions during polymerization in sols of emulsifiers and in emulsions depending on nature of peroxide initiator (sol in H_2O or monomer) and on soly of monomer in H_2O .

ID 183T22

TKACHENKO, G. V.

USSR/Chemistry - Plastics

Jul 51

"Kinetics of the Polymerization of Vinyl Chloride in Solutions Under the Action of Benzoyl Peroxide," G. V. Tkachenko, P. M. Khomikovskiy, S. S. Medvedev, Moscow

"Zhur Fiz Khim" Vol XXV, No 7, pp 823-836

Polymerization of vinyl chloride in dichloroethane soln at 40-70°C is of the 1.5 order relative to concn of monomer and reaction rate is proportional to square root of benzoyl peroxide concn. Polymerization in C₆H₆ soln is of the same order, but reaction rate is proportional to square root of

206T24

USSR/Chemistry - Plastics (Contd)

Jul 51

benzoyl peroxide concn only at 2-5% concns. Total reaction rate is much lower in C₆H₆ than in dichloroethane soln. Discusses polymerization and calculates activation energies.

206T24

TKACHENKO, G. V.

THE UNIVERSITY OF CHICAGO

[illegible]

TKACHENKO, G.V.

AUTHORS: Tkachenko, G.V., Stunen', L.V., Kofman, L.P., 76-12-11/27
 Frolova, L.Z.

TITLE: Common Polymerization of Vinyl Chloride With the Esters of Acrylic Acid (Sovmestnaya polimerizatsiya khloristogo vinila s efirami akrilovoy kisloty).

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 12, pp. 2676-2681 (USSR)

ABSTRACT: M.M. Kucherenko (a woman), participated in the performance of some tests. A.D. Abkin and P.M. Khomikovskiy took part in the computation of the results. The common polymerization of vinyl chloride, as well as of methyl-, butyl-, and octylacrylates were investigated. It is shown that the velocity of common polymerization and the molecular weights of the developing polymers increase with the rise of acrylate content. It is further shown that the common polymers with all monomer relations in the initial mixture are enriched by acrylate-components. The constants of common polymerization are computed from the data of the polymeric composition, viz. with methyl acrylate $\alpha = 0.06$, $\beta = 4.4$, with n-butyl acrylate $\alpha = 0.07$, $\beta = 4.4$, with n-octyl acrylate $\alpha = 0.12$, $\beta = 4.8$. α and β are the constants of common polymerization for the vinyl chloride α and the investigated acrylate β . It is shown that the velocities of separated polymerization

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Common Polymerization of Vinyl Chloride With the Esters of
Acrylic Acid

76-12-11/27

of the acrylates are essentially higher than those with vinyl chloride. The computation of the co-polymer-composition was carried out by taking the found constants of common polymerization into account. It is shown that the test data agree with those obtained by computation. The structure distribution in the macro-chain of the co-polymers was computed. It is shown that with an increase of the acrylate content in the monomer initial mixture, the structural part with the longer acrylate members increases substantially. The probability for the formation of an acrylate-acrylate-bond in the co-polymer amounts to approximately 0.7 with equimolecular mixtures of monomers. There are 3 figures, 5 tables, and 11 references, 6 of which are Slavic.

SUBMITTED: August 17, 1956

AVAILABLE: Library of Congress

Card 2/2

5(4), 15(9)

AUTHORS:

SOV/76-32-10-5/39
Tkachenko, G. V., Stupen', L. V., Etlis, V. S., Kofman, L. P.

TITLE:

~~Polimerizatsiya khloro-~~
Polymerization of the Chlorine Derivatives of Styrene and Their
Copolymerization With Vinyl Chloride (Polimerizatsiya khlor-
proizvodnykh stirola i ikh sovместnaya polimerizatsiya s khlor-
istym vinilom)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 10, pp 2251-2255
(USSR)

ABSTRACT:

In the present paper the single polymerization of β, β -dichloro-
styrene and α, β, β -trichloro-styrene is investigated as well as
their copolymerization with vinyl chloride. In some experiments
L. A. Kracheva participated as well. The polymerizations took
place in glass ampoules and in a steel autoclave. The technique
of filling the ampoules was described in reference 9, whereas
the polymerization velocity was measured dilatometrically
according to reference 10. To determine the relative viscosity
the balance according to V. A. Kargin was used (Ref 11). It was
found that the substitution of the hydrogen atoms in the vinyl
group of styrene leads to the fact that the monomer also in the
presence of peroxides, azo compounds and some redox systems, as

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SOV/76-32-10-5/39

Polymerization of the Chlorine Derivatives of Styrene and Their Copolymerization With Vinyl Chloride

well as the Friedel-(Fridel) Krafts catalyst does not polymerize. This low reactivity is explained by steric hinderances. The higher reactivity of the radical of α,β,β -trichloro-styrene, as well as the polarity of the molecule, leads to a more rapid copolymerization of this monomer with vinyl chloride than with styrene. β,β -dichloro-styrene polymerizes slowly according to the ionic mechanism with catalysts of the cation type to a small degree of transformation. It is assumed that in the copolymerization of vinyl chloride with β,β -dichloro- and α,β,β -trichloro-styrene radicals with a low reactivity are formed, due to which fact the reaction velocity is decreased and the polymers obtained have a reduced molecular weight. An introduction of α,β,β -trichloro-styrene into the chain of the polychloro-vinyl leads to a decrease of the transition temperature into the vitreous and viscous state, i. e. an internal plastification takes place. The authors thank V. A. Kargin, Member, Academy of Sciences, USSR; K. A. Kocheshkov, Corresponding Member, Academy of Sciences, USSR; A. D. Abkin; and P. M. Khomikovskiy. There are 2 figures and 13 references, 9 of which are Soviet.

Card 2/2

15(9), 5(4)

SOV/76-32-11-5/32

AUTHORS: Tkachenko, G. V., Stupen', L. V., Kofman, L. P., Karacheva,
~~L. A.~~

TITLE: The Copolymerization of Vinyl Chloride With Methacrylic Esters
(Sovmestnaya polimerizatsiya khloristogo vinila s efirami meta-
krilovoy kisloty)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 11, pp 2492-2499
(USSR)

ABSTRACT: This paper is a continuation of previous investigations (Refs
1,2). Copolymers of the vinyl chloride (A) with methyl-(B), n-
butyl-(C), and n-octylacrylate (D) were obtained and their
composition and properties were determined. Some quantitative
rules governing the reaction properties of the investigated
acrylic and methacrylic esters were found. Corresponding data
were also obtained for the copolymers of (A) with vinyl benzoate
(E) (the latter was produced by V. S. Etlis, just as (D)). At
a certain ratio of the components these products have better
elasticity properties than polyvinyl chloride. The rate of
polymerization was determined dilatometrically in a dichloro-
ethane solution, and the heat effect on the mixed polymers of

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The Copolymerization of Vinyl Chloride With Methacrylic Esters

a balance according to V. A. Kargin (Ref 6) was measured. The copolymerization constants were obtained graphically according to an equation by L. M. Gindin, A. D. Abkin and S. S. Medvedev (Ref 7). The copolymers of (A) with methacrylates are completely soluble in cyclohexane, in contrast to those with (E). The copolymerization velocity as well as the viscosity of the reaction products are considerably lower with methacrylates than with acrylates, which fact is explained by the effect of the methyl group in the α -position. The copolymerization constants for (A) with (B, C, D, and E) obtained at 45° are the following: $\alpha = 0.02$, $\beta = 15$; $\alpha = 0.05$, $\beta = 13.5$; $\alpha = 0.04$, $\beta = 14.0$; $\alpha = 0.72$ and $\beta = 0.28$. The fact that at (E) $\beta < 1$ is explained by the difference of the electron density of the double bond C=C. The reactivities of (A) and (E) are rather close to each other, and the copolymerization yields rather homogeneous products which at a ratio of (A) : (E) = 0.72 : 0.28 form an azeotropic mixture. The macromolecules of the copolymers (A) with (B, C, D) mainly consist of long methacryl chains and short vinyl chloride chains. In the copolymerization products of (A) and (E) at equimolecular ratios an arranged distribution of the chains is observed; with an increase of the (A) amount the

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The Copolymerization of Vinyl Chloride With Methacrylic Esters

chains (A)-(A) are increased. The authors thank Professor A. D. Abkin and P. M. Khomikovskiy. There are 4 figures, 6 tables, and 9 references, 5 of which are Soviet.

SUBMITTED: April 11, 1957

Card 3/3

5(4), 15(8)
AUTHORS:

SOV/76-33-1-5/45
Tkachenko, G. V., Etlis, V. S., Stupen', L. V., Kofman, L. P.

TITLE:

The Copolymerization of Vinyl Chloride With Styrene and Pentachloro Styrene (Sovmestnaya polimerizatsiya khloristogo vinila so stirolom i pentakhlorostirolom)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 25-31 (USSR)

ABSTRACT:

According to various publications (Refs 1-4) there is a considerable difference between the reactivity of styrene (I) and that of pentachloro styrene (II). It is assumed that a copolymerization of styrene with vinyl chloride (III) and styrene derivatives (due to the influence of the less reactive styrene derivatives) results in more homogeneous copolymers. The polymerization took place in the substance itself and in the emulsion (glass ampoules and 4 liter steel autoclave), as well as in dichloro-ethane solutions (in the dilatometer) (Refs 9,10). The velocities of the polymerizations of (III), (I), and (II) in dichloro-ethane solutions at 60° and monomer concentrations of 1.6 mol/l besides an initiating amount (dinitrile of the azoiso fatty acid) of 0.06 mol/l were: 0.0060, 0.0001 and 0.0036 mol/l.minute. In the case of a copolymerization of (III)

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with (II), the function curve of the yield of polymers in dependence on the composition of the initial mixture with a content of 0.08-0.1 mole-parts of (II) passes through a minimum. Calculations based upon the results of the investigations (Table 3) resulted in the values $\alpha = 0.045$ and $\beta = 12.4$ for the constants of a copolymerization of (III) with (I), which agrees with Dook's (Dok) statements (Ref 3). The copolymerization of (III) with (II) takes place at a measurable velocity, i. e. slower than the copolymerization of (III) with (I). The reaction constants calculated from the equations (1) and (2) corresponding to a diagram (Fig 5) are given as follows: $\alpha = 0.43$ and $\beta = 5.3$. The thermomechanical curves of copolymers obtained by the copolymerization of (III) with (II) containing more than 20% of (II) do not possess a range of high elasticity. Copolymers containing up to 10% of (II) do not differ from polyvinyl chloride as regards the temperature of transformation from highly elastic to viscous-liquid state. L. A. Karacheva participated in some of these experiments. The cooperation of A. D. Abkin and P. M. Khomikovskiy is appreciated. There are 5 figures, 3 tables, and 15 references, 8 of which are Soviet.

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SOV/76-33-1-5/45

The Copolymerization of Vinyl Chloride With Styrene and Pentachloro Styrene

SUBMITTED: May 17, 1957

Card 3/3

LOSEV, Ivan Platonovich; TROSTYANSKAYA, Yelena Borisovna; TKACHENKO,
G.V., red.; SHPAK, Ye.G., tekhn.red.

[Chemistry of synthetic polymers] Khimiia sinteticheskikh
polimerov. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry,
1960. 574 p. (MIRA 13:5)
(Polymers)

KISELEV, Boris Abramovich; TKACHENKO, G.V., red.; SHPAK, Ye.G., tekhn. red.

[Glass-reinforced plastics] Stekloplastiki. Moskva, Gos. nauchno-
tekhn. izd-vo khim. lit-ry, 1961. 239 p. (MIRA 14:11)
(Glass reinforced plastics)

MEDVED', T.YA., KABACHNIK, M.I., MOSHKIN, P.A., VARSHAVSKY, S.L.,
KOFMAN, L.P., GEFTER, YE.L., TKACHENKO, G.V., DANILEVICH, A.A.

Industrial method of synthesis of di-B,B chlor-ethyl of vinyl-
phosphinic acid from ethylene oxide and phosphorus trichloride.

Report submitted for the 12th Conference on high molecular weight compounds
devoted to monomers, Baku, 3-7 April 62

TKACHENKO, G.V.; VLASOVA, T.A.

Biology of the peach flowering. Mach.dokl.vys.shkoly; biol.nauki
no.4:133-135 '65. (MIRA 12:10)

1. Rekomendovana botanicheskim sadom Odesskogo gosudarstvennogo
universiteta im. I.I.Mechnikova.

KHRULEV, Mikhail Valer'yanovich. Prinimal uchastiye TKACHENKO, G.VV,
kand. khim. nauk; BAGATUR'YANTS, K.G., red.; ROMM, R.S.,
red.

[Polyvinyl chloride] Polivinilkhlord. Moskva, Izd-vo
"Khimiia," 1964. 262 p. (MIRA 17:8)

TKACHENKO, G.V.

USSR/Cultivated Plants - Fruits. Berries.

M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53836

Author : Tkachenko, G.V.

Inst : -

Title : The Effect of Low Temperatures on the Vital Activity
of the Eyes of the Grape Plant in Trans-Carpathian
Region.

Orig Pub : Sad i ogorod, 1957, No 5, 65-66

Abstract : Mounding of the lower part of the vine and long pruning
protect the plants from severe injuries by frost. Long
pruning increases the number of uninjured eyes since the
frost resistance of the buds varies with the length of
the shoot decreasing at the base and above the 13th eye.
-- Ye.A. Makarevskaya

Card 1/1

USSR / Cultivated Plants. Fruits, Berries, Nutbearing, M-6
Teas.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6454

Author : Tkachenko, G. V.; Korneev, N. T.

Inst : Not given

Title : The Effect of Lignite Waste on the Yield of
Grapes

Orig Pub : Ukr. botanichnly zh., 1957, 14, No 4, 47-51

Abstract : Lignite waste placed together with manure
in the form of compost (2 parts of manure and
1 part of lignite waste, 5 kg for each shrub
of grapes), as well as in pure form, or to-
gether with a mineral fertilizer accelerated
the beginning of the flow of sap by 2 - 3
days. The opening of buds and blooming were
also accelerated by 2 - 3 days, the fall of the

Card 1/2

TRACHENKO, G.V., Doc Bio Sci--(diss) ^{the} "Biology of ^{the} flowering and pol-
lination of grapes in ~~the~~ Transcaucasian^{ns}" Mos, 1958. 32 pp (Min of Higher
Education USSR. Mos Order of Lenin and Order of Labor Red Banner State
U in M.V.Lomonosov), 150 copies. List of author's works, pp 31-32.
(IL,45-58, 144)

-42-

TKACHENKO, G.V.

Abnormalities in the grapevine flower. Nauch.dokl.vys.shkoly; biol.
nauki no.2:107-109 '60. (MIRA 13:4)

1. Rekomendovana kafedroy fiziologii rasteniy i darvinizma Uzhgo-
rodskogo gosudarstvennogo universiteta.
(ABNORMALITIES (PLANTS)) (GRAPES) (STERILITY IN PLANTS)

TKACHENKO, G.V.

Role of stigmal secretions in the pollination of grapevine
(*Vitis vinifera* L.). Bot. zhur. 44 no.7:963-967 J1 '59.
(MIRA 12:12)

1.Uzhgorodskiy gosudarstvennyy universitet.
(Fertilization of plants) (Grapes)

TKACHENKO, G.V.

Growth of pollen tubes and fertilization selectivity in grapes.
Nauch.dokl.vys.shkoly; biol.nauki no.2:121-125 '59.
(MIRA 12:6)

1. Rekomendovana kafedroy darvinizma i genetiki Uzhgorodskogo
gosudarstvennogo universiteta.
(Grape breeding)

TKACHENKO, G.V.

Variation of elements of the embryo sack in grapevines
pollinated by different methods. Nauch.dokl.vys.shkoly;biol.
nauki no.4:129-133 '58. (MIRA 11:12)

1. Rekomendovana kafedroy fiziologii rasteniy i darvinizma
Uzhgorodskogo gosudarstvennogo universiteta.
(Grapes) (Fertilization of plants)

USSR/Cultivated Plants - Fruits. Berries!

M-6

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30062

Author : Tkachenko, G.V.

Inst : -

Title : The Dropping Off of Grapes Flowers and Ovaries in Zakarpatskaya Oblast'.

Orig Pub : Nauchn. zap. Uzhgorodsk. gos. un-ta, 1956, 17, 49-73.

Abstract : Observations made at the plot of the Zakarpatskaya Combined Agricultural Experimental Station have shown that the degree of dropping off of the flowers, buds and ovaries in one and the same grape vine variety in different years is not constant; in 1953 the drop-off of the majority of varieties was within the limits of 47-68%, in 1954 10%. The decisive role in the dropping off is played by the environmental factor which prevents normal flowering, pollination and fecundation. Therefore, there was an increase in dropping off in the Gars-Levelyu, Furmint, Italian Traminer

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USSR/Cultivated Plants - Fruits. Berries.

M-6

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30062

Riesling varieties from 49.2 to 68% when the air temperature dropped to 15° and below and as a result of partial rains during the flowering period in 1953. The elements of fall-off in regard to the grape varieties have different correlation: the buds in the Seremskiy Zelenyy were the largest amount to fall off (20.4%), whereas in the Muskat-Ottonel', Traminer, Portugizer, Zhemchug Saba there was only an insignificant amount of bud fall-off. In Zakarpatskaya Oblast' the liming of the soil, the application of mineral and organic fertilizers reduced the falling off of the flowers, buds and ovaries, thus creating conditions propitious to normal pollination and fecundation.

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TKACHENKO, G. V.

USSR/Cultivated Plants - Fruits, Berries

M-8

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1763

Author : G.V. Tkachenko, Ye.K. Zinevich

Inst : Not Given

Title : The Supplemental Feeding of Grapes with Boron

Orig Pub : Sadovodstvo, vinogradstvo i vinodeliye Moldavii, 1957, No 1,
29-31

Abstract : By spraying a vineyard in the Uzhgorodskiy wine-sovkhoz (in 1955-1956) with 1% solution of boric acid 21 days prior to florescence and during the phase of mass-blooming, the growth of the shoots and the inflorescence was increased. The shedding of flowers and the ovary was less than that of the control. The weight of the bunches and the harvest were increased.

Card : 1/1

TKACHENKO, G.V.

Effect of the quantity of pollen on the fruit formation in
grape. Agrobiologiya no. 3:459-461 My-Je '60. (MIRA 13:12)

1. Uzhgorodskiy gosudarstvennyy universitet, kafedra fiziologii
rasteniy i darvinizma.
(Grapes) (Fertilization of plants)

TKACHENKO, G.V.

Selectivity of fertilization in the grapevine. Vest. Mosk. un.
Ser. biol., pochv., geol., geog. 14 no.3:59-62 '59.
(MIRA 13:6)

1. Kafedra vysshikh rasteniy Moskovskogo universiteta.
(Grapes) (Fertilization of plants)

TKACHENKO, G. Ya.

Treatment of peptic ulcer patients with vikalín. Zdravl' Bel.
9 no.8:67-68 Ag'63 (MIRA 17:3)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof.
A.I. Frankfurt) Vitebskogo meditsinskogo instituta.

SHUPENKO, V.I.; TKACHENKO, G.Ye.; STAYKIN, D.G.

113m of haulage drift mined in one month with the PK-3m cutter-
loader. Ugol' 39 no.1:17-20 Ja '64. (MIRA 17:3)

1. Shakhta im. Abakumove tresta Rutchenkovugol'.

SHUPENKO, V.I.; TKACHENKO, G.Ye.

All-Union record for working an incline at the Abakumova Mine.
Ugol' 39 no.7:1-5 J1 '64. (MIRA 17:10)

1. Shakhta im. Abakumova tresta Rutchenkovugol'.

TKACHENKO, G.Ye.; STAYKIN, D.G.

Using metal netting in mine supports. 'Ugol' 39 no.10:20-21
0 '64. (MIRA 17:12)

1. Shakhta im. Abakumova tresta Rutchenvugol'.

GANDZYUG, S. (Khabarovsk); TKACHENKO, I.; SHASHUNOV, I.; GRANOVSKIY, Ya.;
IGLIN, A.; BORYCHEV, N.

Technological information. Okhr.truda i sots.strakh. 6
no.1:34-37 Ja '63. (MIRA 16:1)

1. Starshiy inspektor otдела okhrany truda Vsesoyuznogo
tsentral'nogo soveta professional'nykh soyuzov (for Iglin).
2. Zaveduyushchiy otделom okhrany truda Tsentral'nogo komiteta
professional'nogo soyuza rabochikh ugol'noy promyshlennosti
(for Borychev).

(Technological innovations)
(Safety appliances)

TKACHENKO, I., zasluzhennyy zootekhnik Ukrainskoy SSR

Two-hundred and thirty-three centners of milk per 100 hectares of
farmland in Chernovtsy Province. Nauka i pered. op v sel'khoz.

8 no.4:24-26 Ap '58.

(Chernovtsy Province--Dairying)

(MIRA 11:5)

YEVDOKIMOV, A.; TKACH, A.; STUPNITSKIY, V.; TKACHENKO, I.

[Economic prosperity of the Ukraine during forty years of the
Soviet regime] Rastsvet ekonomiki Ukrainskoi SSR za 40 let
sovetskoi vlasti. Khar'kov, M-vo vysshego obrazovaniia USSR,
1957. 30 p. (MIRA 11:6)
(Ukraine--Economic conditions)

AGAPOV, V.F., inzh.; TKACHENKO, I.A., inzh.

Overcoming difficulties of smelting electrical steel in 200-ton
open-hearth furnaces. Stal' 12 no.2:125-128 F '59.
(MIRA 12:2)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Smelting) (Open-hearth furnaces)

TKACHENKO, I.A.

Ways of further improving mining operations in the Donets Basin
Anthracite Combine in 1958. Ugol' 33 no.9:5-7 S '58.

(MIRA 12:1)

1. Nachal'nik kombinata Donbassantratsit.
(Donets Basin--Coal mines and mining)
(Anthracite)

TKACHENKO, I. A.

USSR/Metals

Steel Ingots

Metallurgy, Ferrous

Oct 48

"Influence of Gas Evolution on the Formation of a 6.5-Ton Ingot From Boiling Steel,"
Docent A. A. Bezdenezhnykh, V. F. Agapov, A. M. Bigeyev, I. A. Tkachenko, V. M.
Mitryukovskiy, A. L. Kushnarev, Engineers, Magnitogorsk Mining Metal Inst, 7 pp

"Stal'" No 10

Use of new method for collecting gases evolved from a solidifying boiling steel ingot (under positive pressure) indicated inaccuracy of vast majority of results of foreign researchers, who worked with a vacuum and extracted gases from metal and fettling simultaneously, using containers for taking samples. Main constituent of gases evolved is carbon monoxide (90%), not hydrogen. Vigorous boiling of the metal in the mold causes vertical circulation, which improves ingot structure. Manganese has considerable effect on rate of gas evolution. When content exceeds 0.40%, amount of gas decreases and ingot structure deteriorates.

PA 19/49T78

TKACHENKO, I.A.; FILATOV, A.D.; UZIYENKO, A.M.; GRUZNOV, A.K.; DEYNEKO, D.I.;
ARYCHENKOV, V.P.; ZAYAKIN, B.I.

Quick pouring and the quality of rimmed steel. Metallurg 10 no.8:
17-19 Ag '64. (MIRA 17:11)

1. Magnitogorskiy metallurgicheskiy kombinat.

PETROV, A.S.; TKACHENKO, I.A.; KRIVOSHEYA, P.I.; KRAVCHENKO, A.V., inzh.

Advanced section of communist labor. Put' i put. khoz. 9 no.2:19
'65. (MIRA 18:7)

1. Nachal'nik Svatovskoy distantzii Donetskoy dorogi (for Petrov).
2. Sekretar' partiynogo byuro, stantsiya Svatovo, Donetskoy dorogi (for Tkachenko).
3. Svatovskaya distantsiya Donetskoy dorogi (for Kravchenko).

VORONOV, F.D., prof.; FILATOV, A.D., inzh.; DEYNEKO, D.I., inzh.; BIGEYEV, A.M., kand. tekhn. nauk; TKACHENKO, I.A., inzh.; SELIVANOV, N.M., kand. tekhn. nauk; ARYCHENKOV, V.P., inzh.

Use of boil intensifiers in the rapid pouring of rimmed steel.
Stal' 25 no.4:317-319 Ap '65. (MIRA 18:11)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy gornometallurgicheskiy institut.

TKACHENKO, I.A., inzhener; DIKSHTEYN, Ye.I., inzhener; VARSHAVSKIY, A.P.,
inzhener; GONCHAREVSKIY, A.Ya., inzhener; NIKOLAYEV, A.G., inzhener;
CHERNOGRUD, P.G., inzhener.

Top casting of steel through two stepper tubes. Metallurg no.5:29-32
My '56. (MLRA 9:9)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Smelting)

ZAYAKIN, B.I.; BIGEYEV, A.M.; UZIYENKO, A.M.; Prinimali uchastiye:
TKACHENKO, I.A., inzh.; RABINOVICH, Ye.I., kand.tekhn.nauk;
IVANOVA, N.G., inzh.; BIGTAGIROV, K.K., inzh.

Sulfur liquation in large rimmed steel ingots. Izv. vys. ucheb.
zav.; chern. met. 5 no.7:62470 '62. (MIRA 15:8)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy
gornometallurgicheskiy institut.
(Steel ingots—Sulfur content)

VORONOV, F.D., prof.; SELIVANOV, N.M., kand.tekhn.nauk; RABINOVICH, Ye.I.,
kand.tekhn.nauk; UZIYENKO, A.M., inzh.; TKACHENKO, I.A., inzh.;
KUSTOBAYEV, G.G., inzh.; IVANOVA, N.G., inzh.; RYABCHIKOV, F.D., inzh.;
GRUZN OV, A.K., inzh.

Developing a technology for the casting and quality investigation
of 21-ton rimmed steel ingots. Stal' 22 no.8:709-713 Ag '62.

(MIRA 15:7)

(Steel ingots)

VORONOV, F.D., prof.; MOROZOV, A.N., prof., doktor tekhn.nauk;
SELIVANOV, N.M., kand.tekhn.nauk; SMIRNOV, Yu.D., kand.tekhn.nauk;
RABINOVICH, Ye.I., kand.tekhn.nauk; CHERNOV, G.I., inzh.;
TKACHENKO, I.A., inzh.; BIKTAGIROV, K.K., inzh.; FILIPPOV, V.M.,
inzh.; KUSTOBAYEV, G.G., inzh.

Making St. 3ps capped steel in Magnitogorsk Metallurgical
Combine open-hearth furnaces. Stal' 22 no.8:716-718 Ag '62.
(MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat i Chelyabinskiy
nauchno-issledovatel'skiy institut metallurgii.
(Magnitogorsk—Open-hearth process)

SELIVANOV, N.M.; TKACHENKO, I.A.; MAKARYCHEV, A.R.

Research at the Magnitogorsk Metallurgical Combine. Stal' 22
no.8:718-719 Ag '62. (MIRA 15:7)
(Magnitogorsk—Steel ingots)

IKACHENKO, I.A.

AUTHORS: Uziyenko, A.M., Tkachenko, I.A., Varshavskiy, A.P.,
Engineers and Rabinovich, Ye.I., Candidate of Technical
Sciences, Zayakin, B.I., Zvezhitskaya, N.G., Engineers

TITLE: Improvement in the Structure of the Top Part of Rimmed Steel Ingots
(Uлучsheniye struktury golovnoy chasti slitka kipyashchey
stali)

PERIODICAL: Stal', 1958, Nr 10, pp 899 - 905 (USSR)

ABSTRACT: A study of the mechanism of formation of the microstructure
of the head part of rimming steel ingots and an investi-
gation of methods of decreasing the height of the concen-
trated segregation zone are described. The influence of
the following factors on the structure of ingots was
studied: a) the duration of boiling of the metal in ingot
moulds; b) addition to moulds of fluxes, and c)
additions onto the top of the metal in the moulds of
various deoxidants. Investigations were carried out on
heats of steels 08kp, St1, St2 and St3, chemical com-
positions of which are given in the table. The influence
of the duration of boiling of the metal in moulds on the
distribution of carbon (A), sulphur (B) and phosphorus (V)
along the ingot axis is shown in Figure 2 - that on the
indices of mechanical properties (yield point, tensile

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SOV/133-58-10-11/31
Improvement in the Structure of the Top Part of Rolled Steel Ingots

strength and relative elongation) of metal from the head part of the ingots of St3kp steel in Figure 3 and the influence of the duration of boiling with and without the use of deoxidants on the distribution of carbon, sulphur and phosphorus in the axial zone along the height of ingots of St3 steel ... shown in Figure 4, changes of mechanical properties of metal from the axial zone along the height of ingots and of rolled plate (with various boiling times and with the application of deoxidants) are shown in Figures 5 and 6, respectively. Variation in the distribution of non-metallic inclusions (SiO_2 , MnO and MnS) in the axial zone along the height of ingots of St3kp steel, with various boiling times and with the application of deoxidants are shown in Figure 7. It was found that in order to obtain dense structure of the top part of ingots of steels with low and higher carbon contents, different methods are necessary. An increase of the duration of boiling in ingot moulds and an addition of fluxes on the surface of metal decrease the depth of the position of axial porosity but improve the distribution of segregating elements and plastic properties of the

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SOV/133-58-10-11/31

Improvement in the Structure of the Top Part of Rimmed Steel Ingots

of the ingots
axial zone of the head part of low-carbon steels 08kp, St1 and St 2. On prolonged boiling of St3 steel, the structure of the head part of ingots improves but simultaneously its external state deteriorates. The use of deoxidants, e.g. 45% ferrosilicon (0.15 - 0.2 kg/t steel) gives in this case satisfactory results. Ingots deoxidised with ferrosilicon possess dense structure and increased plasticity in the head part. During rolling sheets, no laminations are formed. The use of a prolonged boiling and additions of microgranite for low-carbon rimming steel and killing of St3 steel with ferrosilicon permits decreasing standard crop head of ingots by 3-5% without decreasing the quality of the metal in the top part of ingots. There are 7 figures, 1 table and 3 Soviet references.

Card 3/4

SOV/133-58-10-11/31

Improvement in the Structure of the Top Part of Rimmed Steel Ingots

It is stated in the editorial note that the above findings should be additionally confirmed by experiments on a large scale.

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat
(Magnitogorsk Metallurgical Combine)

Card 4/4

UZIYENKO, A.M., inzh.; TKACHENKO, I.A., inzh.; VARSHAVSKIY, P., inzh.;
RABINOVICH, Ye.I., kand.tekhn.nauk; ZAYAKIN, B.I., inzh.;
ZARZHITSKAYA, N.G., inzh.

Improving the structure of the head part in rimmed steel ingots
(with summary in English). Stal' 18 no.10:899-905 0 '58.
(MIRA 11:11)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Steel ingots) (Steel--Metallurgy)

SOV/133-59-2-8/26

AUTHORS: Agapov, V.F. and ~~Trachenko~~, I.A. Engineers

TITLE: Mastering of the Production of Dynamo Steel in a 200 Ton Open Hearth Furnace (Osvoeniye vyplavki dinamnoy stali v 200-t martencovskikh pechakh)

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ABSTRACT: The development of smelting practice of dynamo steels E12 and E21 in a 200 ton open hearth furnace is described. The chemical composition of ladle samples of steel should be, %:

Type of Steel	C	Mn	Si	S
E12	0.04-0.06	0.25-0.40	1.30-1.80	≤ 0.025
E21	0.04-0.06	0.25-0.40	1.70-2.20	≤ 0.025
	P	Cu	Cr	Ni
E12	≤ 0.030	≤ 0.15	≤ 0.05	≤ 0.15
E21	≤ 0.030	≤ 0.15	≤ 0.05	≤ 0.15

Card 1/5 The charge is made from ordinary low manganese (up to 0.30%) pig and the usual steel scrap, so as to obtain

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carbon content after melting 0.5 - 0.8% above the required; 4 - 5% of lime is introduced into the charge. During the melting period the maximum possible amount of slag is removed (1.5 ladles of a capacity of 11 m³). The basicity of slag after melt out should not be below 1.7. During refining about 1 ladle of slag is removed. If after the melt out the content of sulphur is about 0.035% or more an addition of up to 1 ton per heat of ferro-manganese, containing above 1% of silicon is permitted. When the desulphurisation is finished a rapid decarbonisation is carried out up to a carbon content of 0.04 - 0.05% is obtained. Small additions of iron ore are discontinued 20 minutes before the preliminary deoxidation in the furnace but the bath should continue boiling up to the beginning of this deoxidation. The velocity of decarburisation during the last 20-30 minutes of boiling should be not lower than 0.06%/hr; slag basicity before deoxidation 2.5-4 and the FeO content should not exceed 25%. The final slag is made by additions of lime (in two

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portions), bauxite and scale. A typical course of smelting is shown in Fig.1. The metal temperature before deoxidation should be 1585-1600°C. The preliminary deoxidation is done with silicomanganese, so as to obtain the required manganese content in the finished metal and 0.12 - 0.14% of silicon. 5 - 10 minutes after the deoxidation with silicomanganese the heat is tapped. When the ladle is 1/5 to 2/3 full, additions of preheated to red heat ferrosilicon are made. 30% of silicon is introduced with 75% of ferrosilicon and the rest with 45% ferrosilicon. Characteristic losses of manganese and silicon during deoxidation and their dependence on the carbon content of metal are shown in Fig.2 and 3 respectively. The loss of deoxidants depends mainly on the carbon content before deoxidation and on the size and time of the last addition of ore (Fig.4). The influence of the basicity of finishing slag on its FeO content is shown in Fig.5. Steel is teemed into wide end up 7.4 ton ingots (Fig.6) through a two stopper intermediate ladle of 27 ton capacity. After filling the shrinkage head the

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surface of metal is covered with bunkerite in an amount of 1.5 kg/t of steel. The composition of bunkerite is given. In order to improve the surface quality of the ingots, sleeves up to 700 mm high and 500-600 mm in diameter are inserted in the ingot moulds. These sleeves are made from sheets 0.4 - 1 mm thick. It was found that on decreasing manganese content of the metal below 0.25%, the amount of transverse cracks on rolling ingots on the blooming mill increases (Fig.7). For this reason the manganese content in finished steel was maintained at 0.25 - 0.40%. At this manganese concentration no noticeable deterioration in the electromagnetic properties of steel takes place. The influence of metal temperature before decarboxylation on the proportion of rejects due to cracking

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is shown in Fig.8. The lowest proportion of rejects is obtained at 1590°C. There are 8 figures and 1 table.

ASSOCIATION: Magnitogorskiy Metallurgicheskiy Kombinat (Magnitogorsk Metallurgical Combine)

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TKACHENKO, I.A.

"Desulphurization of Low Carbon Unkilled Steel in High Capacity Open-Hearth
Furnaces of Magnitogorsk Metallurgic Plants,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July 1-6, 1957

TKACHENKO, I.A.

Miners of the Lugansk Province welcome the 22d Congress of the
CPSU with suitable achievements. Ugol' Ukr. 5 no.9:8-11 S '61.
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1. Zamestitel' predsedatelya Luganskogo sovnarkhoza.
(Lugansk Province--Coal miners)
(Donets Basin--Coal mines and mining--Labor productivity)